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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/520,098

01/03/2005

Mamoru Sato

04917/LH

6986

1933 7590 04/04/2007
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EXAMINER

LE, HUYEN D

ART UNIT

PAPER NUMBER

2615

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/520,098

Applicant(s)

SATO, MAMORU

Examiner

HUYEN D. LE

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/13/05&01/03/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 and 7-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Saiki et al. (U.S. patent 6,208,237).

Regarding claim 1, Saiki teaches an acoustic transducer that has a vibration actuator (10). The vibrator actuator comprises a magnetic circuit (3, 4, 5, 9, 11), a coil (8), a vibrating plate (1), a suspension (7), and a vibration transmitting portion (2) fixing the suspension (7).

Saiki does not specifically teach the acoustic transducer for an earphone or headphone as claimed. However, Saiki does not restrict to any application for the acoustic transducer (col. 1, lines 7-15) and providing an acoustic transducer in the earphone or headphone is known in the art.

Therefore, it would have been obvious to one skilled in the art to provide the acoustic transducer of Saiki for any portable terminal unit or any audio device such as an earphone or headphone for greater application.

Regarding claims 2-3 and 13, Saiki teaches the vibration actuator that simultaneously generates the body sensible vibration and sound as claimed in claims 2-3 (col. 7, lines 12-40 and lines 62-67 through col. 8, lines 1-2).

Art Unit: 2615

Regarding claim 7, Saiki shows the vibration actuator (10) that has a stepped structure (6) or the stepped structure of the transmitting portion (2, 41) disposed at an outer periphery of the magnetic circuit as claimed (figures 2, 6, 9).

Regarding claim 8, as broadly claimed, Saiki shows the stepped structure that has an air hole as claimed (see the air hole in the holding member figures 2, 9, 10).

Regarding claims 9-12, Saiki teaches the magnetic circuit that has a vibration resonance between 60 Hz and 300 Hz, the transducer that allows bodily sensation of a vibration sound, a tactile sound and a conduction sound as claimed (col. 7, lines 12-40 and lines 62-67 through col. 8, lines 1-2).

3. Claims 1 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. patent 5,861,686).

Regarding claim 1, Lee teaches an acoustic transducer that has a vibration actuator (figures 1, 2). The vibrator actuator comprises a magnetic circuit (2, 6, 7, 9), a coil (8), a vibrating plate (3b), a suspension (3a), and a vibration transmitting portion (1) fixing the suspension (3a).

Lee does not specifically teach the acoustic transducer for an earphone or headphone as claimed. However, Lee does not restrict to any application for the acoustic transducer (col. 1, lines 7-12) and providing an acoustic transducer in the earphone or headphone is known in the art.

Art Unit: 2615

Therefore, it would have been obvious to one skilled in the art to provide the acoustic transducer of Lee for any audio communications device such as an earphone or headphone for greater application.

Regarding claims 4-6, Lee shows a cover (4) covering an outer side and a terminal (13b, 23b, 33b) for electrical connection. As shown in figures 1-2, the terminal (13b, 23b, 33b) is disposed on the cover (4), the terminal (13b) is provided inside the vibrator, and the cover (4) has a sound release hole.

4. Claims 1, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda (U.S. patent 6,847,139).

Regarding claim 1, Ueda teaches an acoustic transducer that has a vibration actuator (figures 1, 23, 29, 31-33). The vibrator actuator comprises a magnetic circuit (2, 3, 4, 20, 20a, 20b, 21, 22), a coil (5 in figure 1 and 3 in figures 31-32), a vibrating plate (see the diaphragm in figures 1, 29, 31 and 32), a suspension (see the suspension in figure 1 and 5, 50, 52a to 52c in figures 29, 31, 33), and a vibration transmitting portion (1) fixing the suspension.

Ueda does not specifically teach the acoustic transducer for an earphone or headphone as claimed. However, Lee does not restrict to any application for the acoustic transducer (col. 1, lines 14-18) and providing an acoustic transducer in the earphone or headphone is known in the art.

Therefore, it would have been obvious to one skilled in the art to provide the acoustic transducer of Ueda for any audio communications device such as an earphone or headphone for greater application.

Art Unit: 2615

Regarding claims 4 and 6, Ueda shows a cover (9 in figure 1 and 6 in figures 29, 31-33) covering an outer side and a terminal (see the terminals in figures 1, 23 and 32) for electrical connection. As shown in figures 1, 23 and 32-33, the terminal is disposed on the cover, and the cover (4) has a sound release hole.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fukuyama (U.S. patent 6,570,993) teaches an electric-mechanical acoustic converter for vibrating or generating a sound.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (571) 272-7502. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SINH TRAN can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HL
March 29, 2007



HUYEN LE
PRIMARY EXAMINER